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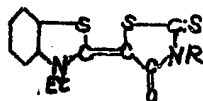
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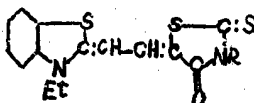
"Ultraviolet Absorption Spectra of Some Photosensitizing
Dyes II," A. E. Intskil and I. A. Sidorov, S. M.
Kirov Chem Technol Inst, Kharkov

"Zhur Obsch Khimii" Vol 17, 1947, pp 145-8

The dyes investigated are: I (A with R = H), II (B with R = H), III (A with R = Ph) and IV (B with R = Ph). I in alcohol (2×10^{-3} M) shows four bands, one broad.



(A)



(B)

maximum 4,215 (50,000 (molar extinction coefficient ϵ)) two in the region 2,600-2,800 Å., maximum at 2,775 (8,000) and 2,620 (20,000), and one narrow band maximum 2,340 (25,000), minimum 2,675 (15,000), 2,455 (6,500), and 2,300 (17,500); the simultaneous presence of ribonamine and benzothiazole ethiodide residues gives rise to two new bands. The curve of II in alcohol (5×10^{-5} M) is distinctly shifted to longer λ ; the long-wave maximum of I is absent; absorption is shifted from longwave ultraviolet into the visible region. In the presence of excess EtOH , I (4×10^{-5} M) shows four bands with the maximum 4,200 (25,000), 2,925 (15,000), 2,560 (8,750), and 2,380 (7,500), minima at 2,680 (5,000) and 2,475 (6,250); thus, presence of alkali lowers the intensity of absorption.

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shifts but little the long-wave and short-wave bands and shifts much more markedly, to longer λ , the middle-ultraviolet bands. II (10^{-3} M) with excess EtONa shows two bands, maximum 3,260 (16,000) and 2,780 (12,000), minimum 2,945 (8,000) and 2,690 (10,000). The curve of III (10^{-3} M) is similar to that of I: four bands, maximum 4,225 (100,000), 2,830 (25,000), 2,640 (20,000), and 2,340 (20,000), minimum 2,710 (13,000), 2,470 (10,000), 2,290 (13,000). IV (10^{-4} - 10^{-5} M) has four bands, maximum 3,605 (3,500), 3,200 (6,000), 2,900 (8,000), and 2,335 (25,000), minimum 3,500 (2,500), 3,130 (5,000), 2,685 (6,000), and 2,300 (20,000); again, introduction of two methyl groups shifts all bands to longer λ and lowers the absorption in the ultraviolet.

"Absorption Spectra and Structures of Benzene Derivatives: IX. Acetophenone," N. A. Vasyashko and Yu. S. Rozum, Kharkov Chem Tech Inst

"Zhur Obshch Khimii" Vol 16, 1946, pp 593-609

Absorption spectra of acetophenone were determined in hexane, EtOH, H_2SO_4 , and solutions of EtONa. The curves are given. A new band (β -band) was found which increased in intensity with alkali being present. There were found six bands in acetophenone solutions in hexane, which are grouped by intensity in the order: $\beta, \alpha, \gamma, \delta, \epsilon, \zeta$. The weak β -band was compared with the weak band of 2,5-dimethyl-1,3-butadiene and shown to be related to the conjugated bond system and presumably, with acetophenone, to the existence of a bi-radical structure. In strong H_2SO_4 there is resonance between the carbonium and oxonium cation structures, with the α -band being enhanced by the former structure and the γ -band by the latter. Similar resonance exists also in the solutions of acetophenone in neutral solvents, with the added structure of the classical structural formula. In the presence of EtONa the spectrum of acetophenone undergoes but little variation, which is presumably due to formation of hemiacetals. A very weak enolization of acetophenone is postulated. The six bands in hexane have a maximum at: 3,850, 3,250, 2,865, 2,770, 2,870, and 1,900 Å.

"Intramolecular Hydrogen Bond and Its Detection by Means of Ultraviolet Absorption Spectra. I," A. E. Intskii, Chem Technol Inst Kharkov

"Zhur Fiz Khimii" Vol 19, 1945, pp 282-5

In aromatic compounds the existence of a H bond between a CO or a NO_2 group and an O-OH group influences the absorption spectra in at least three ways. (1) The usual similarity between the effects of o- and p-OH is absent; o-OH raises the absorption coefficient ϵ more than does p-OH. (2) Also the similarity between the effects of o-OH and o- OCH_3 disappears; the ϵ of o- OCH_3 is similar to those of p-OH and p- OCH_3 compounds. (3) The long-wave boundary of alcohol solutions is shifted to shorter wave lengths λ compared with hexane solutions;

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the solvent effect on the spectra of methoxy compounds has the opposite direction. These rules are confirmed for solutions of 2,6-dihydroxy- and 2,6-dimethoxynitrobenzene. The hydroxy compound has in hexane 2 maxima at 3,900 Å ($\epsilon = 1,660$) and 3,090 Å ($\epsilon = 10,000$), and in EtOH 2 maxima at 3,095 Å ($\epsilon = 3,500$) and 2,750 Å ($\epsilon = 3,000$), and an inflection point at 3,600 Å ($\epsilon = 1,000$). The methoxy compound has in hexane a maximum at 2,750 Å ($\epsilon = 2,000$), and in EtOH a maximum at 2,700 Å ($\epsilon = 3,500$), and an inflection point at 2,900 Å ($\epsilon = 1,000$). The ϵ is less than 200 in hexane at $\lambda > 4,850$ Å for the hydroxy and at $\lambda > 3,180$ Å for the methoxy compound.

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